REMARKS

In the present application, claims 1-14 are pending. Claims 1, 7, 9, and 11-14 are rejected by the Examiner under 35 U.S.C. §102(e). Claims 2-6, 8, and 10 are rejected by the Examiner under 35 U.S.C. §103(a). Applicants have amended claims 1, 3, 7, and 14. In view of the foregoing, Applicants respectfully request reconsideration of the application.

Rejection Under 35 U.S.C. §102(e)

In paragraph 3 of the final Office Action, claims 1, 7, 9, and 11-14 are rejected under 35 U.S.C. §102(e) as being unpatentable over Nguyen (U.S. Patent 6,308,189). Applicants respectfully traverse this rejection.

Applicants have amended claim 1 to recite a second circuit that comprises "at least one multiplexer directly coupled to at least one of the barrel shift registers." Nguyen discloses an apparatus and method for performing partial logical shifts of a multiple-word logical signal using barrel shifters. In support of this rejection, the Examiner cites FIG. 3A of Nguyen with barrel shifters 301 and 302, AND gates 314, 335, and 332, an inverter 331, and the MUX 337. However, Nguyen does not teach a multiplexer that is directly coupled to a barrel shifter as recited in amended claim 1. Instead, as depicted in FIG. 3A of Nguyen, the barrel shifter 301 is connected to the AND gate 321 and then the AND gate 321 is connected to the MUX 338. Therefore, the barrel shifter 301 is not directly coupled to the MUX 338 as recited in amended claim 1.

Additionally, in second paragraph of page 2 of the Advisory Action, the Examiner clarifies the assertion that "the AND gates and the inverters are used to select the proper signals

to be sent to the inputs of the MUX, after which the control signals are used to select the proper input that is to be output from the MUX." Applicants would like to clarify that even though the AND gates and the inverters do perform selection of the inputs of the MUX, the AND gates and the inverters are separate elements from the MUX. As discussed above, these separate elements are located between the barrel shifters and the MUX that prevent direct coupling. Therefore, claim 1 is allowable over Nguyen.

Applicants have also amended claims 7 and 14 with a similar limitation, and the same arguments for amended claim 1 also apply to independent claims 7 and 14. Claim 9 and 11 depend directly from claim 7 and are therefore allowable for at least the same reasons as claim 7. Claims 12 and 13 depend directly from claim 1 and are therefore allowable for at least the same reasons as claim 1.

Rejections Under 35 U.S.C. §103(a)

In paragraph 5 of the final Office Action, claims 2, 3, 5, 6, and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nguyen (U.S. Patent 6,308,189). Claims 2, 3, 5, and 6 depend either directly or indirectly from claim 1 and are therefore allowable for at least the same reasons as claim 1.

Further, in regards to claim 2, the Examiner states in second paragraph of page 3 in the Advisory Action that "processing an interleaved plurality of channels would certainly be a logical modification in order to accommodate the multimedia, multiple-formats of Ngyuen." The Examiner also recites that "[f]urthermore, multimedia data requires a high Quality-of-Service level in order to maintain the timing/delay constraints that are associated with such data." Applicant respectfully disagrees with both arguments.

Applicants fail to see where there is any teaching or suggestion in Nguyen that an operand includes a plurality of interleaved channels. The fact that Nguyen may be applied to multimedia applications does not suggest that operands include a plurality of interleaved channels. The cited portion of Nguyen of col. 1, lines 10-19, teaches that in a single instruction multiple data (SIMD) architecture "a single instruction operates on multiple sets of operands" such as sixteen 8-bit operands and eight 16-bit operands. While there may be multiple operands, applicants fail to see in Nguyen where these operands include a plurality of interleaved channels. Also, the Examiner seems to be extending the teaching of multimedia to read in details that are simply not taught or suggested in Nguyen. For example, the Quality-of-Service (QOS) reference and the plurality of channels are not taught or suggested in Nguyen. Additionally, an argument for a QOS requirement seems to favor a single channel to guarantee QOS over a plurality of channels. Therefore, claim 2 is allowable over Nguyen.

Claim 10 depends from claim 7 and is therefore allowable for at least the same reasons.

In paragraph 6 of the final Office Action, claims 4 and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nguyen (U.S. Patent 6,308,189) in view of Phelps (U.S. Patent 4,512,018). Applicants respectfully traverse. Claim 4 depends directly from claim 1 and is therefore allowable for at least the same reasons as claim 1. Further, claim 8 depends directly from claim 7 and is therefore allowable for at least the same reasons as claim 7.

CONCLUSION

In view of the above remarks, Applicants believe that the rejections in the final Office Action are fully overcome, and the application is in condition for allowance. The Examiner is invited to call Applicants' representative at the number below if he has any questions or if there are remaining outstanding issues.

Respectfully submitted,

Seng-Khoon Tng et al.

Date: 12/18/03 By: Eugene Kim

Eugene Kim, Reg. No. 46,267
Carr & Ferrell LLP
2200 Geng Road
Palo Alto, CA 94303
Phone: (650) 812-3400
Fax: (650) 812-3444